

We Claim:

Sub 24 1. An apparatus engageable with a hand brake assembly for automatically applying at least one brake means secured to a railway vehicle with such hand brake assembly, said apparatus comprising:

(a) an operating means having at least a portion thereof engageable with at least one gear of a gear assembly disposed in a housing member of ^{the} such hand brake assembly for operating such gear assembly in a direction which will cause an application of such at least one brake means;

(b) a source of fluid pressure connected to said operating means for periodically supplying a predetermined pressure to said operating means at least sufficient to cause such application of such at least one brake means; and

(c) a means connected to said source of fluid pressure for initiating said supply of said predetermined pressure to said operating means thereby causing an automatic application of such at least one brake means by such hand brake assembly.

2. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 1 wherein said apparatus further includes a timing means connected intermediate said operating means and said source of fluid pressure for controlling said predetermined pressure being periodically supplied to said operating means.

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3. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 1, wherein said apparatus further includes an overload protection means connected to one of said source of fluid pressure and said operating means for preventing an overload on such at least one brake means..

4. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 1, wherein said operating means includes at least one valve means for connecting said source of fluid pressure to said operating means.

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5. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 4, wherein said operating means includes a plurality of valve means for connecting said source of fluid pressure to said operating means.

6. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 4, wherein said apparatus further includes means for venting said fluid pressure from said at least one valve means.

7. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 5, wherein said apparatus further includes means for venting said fluid pressure from said plurality
5 of valve means.

8. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 7, wherein said operating means
10 includes a piston member connected to said source of fluid pressure.

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9. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 8, wherein said apparatus further
15 includes a valve shifting means, a first portion of said valve shifting means is connected to said piston member and a second portion of said valve shifting means is connected to at least one of said plurality of valve means.

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20 10. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 2, wherein said source of fluid pressure is pneumatic.

11. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 10, wherein said timing means includes a choke and a reservoir.

12. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 1, wherein said means for initiating said supply of said predetermined pressure to said operating means is one of a push button and a signal communicated to said means for initiating said supply of said predetermined pressure.

13. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 1, wherein said means for initiating said supply of said predetermined pressure to said operating means is a push button.

14. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 1, wherein said means for initiating said supply of said predetermined pressure to said operating means is a signal communicated to said means for initiating said supply of said predetermined pressure by one of a radio frequency signal and an electrical signal.

15. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 14, wherein said signal for initiating said supply of said predetermined pressure to said operating means is said electrical signal.

16. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 3, wherein said overload protection means includes a pressure regulating means.

17. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 1, wherein said apparatus further includes a slip clutch connected to said operating means to provide an overload protection means for said operating means.

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as 18. An apparatus engageable with a hand brake assembly for automatically applying at least one brake means secured to a railway vehicle with such hand brake assembly, said apparatus comprising:

(a) an operating means having at least a portion thereof engageable with at least one gear of a gear assembly disposed in a housing member of such hand brake assembly for operating such gear assembly in a direction which will cause an application of such at least one brake means;

(b) a source of fluid pressure connected to said operating means for periodically supplying a predetermined pressure to said operating means at least sufficient to cause such application of such at least one brake means;

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(c) a means connected to said source of fluid pressure for initiating said supply of said predetermined pressure to said operating means thereby causing an automatic application of such at least one brake means by such hand brake assembly;

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(d) a timing means connected intermediate said operating means and said source of fluid pressure for controlling said predetermined pressure being periodically supplied to said operating means; and

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(e) an overload protection means connected to one of said source of fluid pressure and said operating means for preventing an overload on such at least one brake means.

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19. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 18, wherein said operating means includes:

(a) at least one valve means for connecting said source of fluid pressure to said operating means;

(b) means for venting said fluid pressure from said at least one valve means; and

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(c) a piston member connected to said source of fluid pressure.

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20. An apparatus for automatically applying at least one
brake means secured to a railway vehicle with a hand brake
assembly, according to claim 19, wherein said operating means
includes a plurality of valve means for connecting said source of
5 fluid pressure to said operating means.

21. An apparatus for automatically applying at least one
brake means secured to a railway vehicle with a hand brake
assembly, according to claim 20, wherein said apparatus further
10 includes means for venting said fluid pressure from said plurality
of valve means.

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22. An apparatus for automatically applying at least one
brake means secured to a railway vehicle with a hand brake
5 assembly, according to claim 21, wherein said apparatus further
includes a valve shifting means, a first portion of said valve
shifting means is connected to said piston member and a second
portion of said valve shifting means is connected to at least one
of said plurality of valve means.

20 23. An apparatus for automatically applying at least one
brake means secured to a railway vehicle with a hand brake
assembly, according to claim 18, wherein said source of fluid
pressure is pneumatic.

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24. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 23, wherein said timing means includes a choke and a reservoir.

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25. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 18, wherein said means for initiating said supply of said predetermined pressure to said operating means is a push button.

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26. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 18, wherein said means for initiating said supply of said predetermined pressure to said operating means is a signal communicated to said means for initiating said supply of said predetermined pressure by one of a radio frequency signal and an electrical signal.

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27. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 26, wherein said signal for initiating said supply of said predetermined pressure to said operating means is said electrical signal.

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28. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 18, wherein said overload protection means includes a pressure regulating means.

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29. An apparatus for automatically applying at least one brake means secured to a railway vehicle with a hand brake assembly, according to claim 18, wherein said apparatus further includes a slip clutch connected to said operating means to provide said overload protection means for said operating means.

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30. An apparatus engageable with a hand brake assembly for automatically applying at least one brake means secured to a railway vehicle with such hand brake assembly, said apparatus comprising:

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(a) a motor means having a rotatable shaft carrying a gear member thereon, said gear member engageable with at least one gear of a gear assembly disposed in a housing member of such hand brake assembly for operating such gear assembly in a direction which will cause an application of such at least one brake means; and

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(b) a means connected to said motor for starting said motor and thereby initiating an automatic application of such at least one brake means by such hand brake assembly.